

## Outcomes Star™ Psychometric Factsheet: Work Star™ (2nd Edition)

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### Background

The Work Star is a version of the Outcomes Star for individuals accessing employability and work services. The first edition was developed by Triangle with service providers and commissioners from Camden, Islington and Kensington and Chelsea Borough Council, with the development funded through the Learning and Skills Council (LSC).

These collaborators contributed to the outcome areas and Journey of change, providing feedback on the tool as part of an iterative process of development and refinement and piloting the draft version of the Work Star within their organisations. More information about the development of the Work Star can be found in the organisation guide (Burns & MacKeith, 2010) and the overall principles behind the development of all versions of the Outcomes Star are described in MacKeith (2011).

### Method and analytic strategy

Routinely collected, anonymised Work Star (2nd edition) data entered onto the Star Online was analysed by Triangle to test the psychometric properties of this version of the Star. A full explanation of the analytic strategy is provided in the accompanying document – Outcomes Star Psychometric Factsheets: Overview

The data was collected by a charity providing housing, support and employment services to people with a disability or mental health condition. In total, 2544 service users with at least one review Star reading were included. Service users were aged between 16 and 64 ( $M = 37.04$ ), most were White British (75%), 7% were Black and 11% were Asian. There were more males (65%) than females. In terms of support needs, 33% had a learning disability, 15% had a physical disability and 25% had mental health issues.

Inter-rater reliability was assessed using a sample of 42 workers who had just completed the one-day training course to use the Work Star.

### Results

#### ***Does it make sense for the different outcome areas of the Star to be included in the same tool?***

**Factor Structure:** Although some inter-items correlations between Stability and other areas were below .30, a Kaiser-Meyer-Olkin value exceeding the recommended minimum value of 0.60 (Kaiser 1970, 1974) and a significant Bartlett's Test of Sphericity (Bartlett, 1954) supported the suitability of the data for factor analysis. This analysis yielded a unidimensional factor structure explaining 73% of the real variance in the data and 94% of the common variance (i.e. that explained by underlying factors).

It is interesting to note that the Stability area showed less change and smaller correlations with other areas than the other six outcome areas. Stability includes more general issues such as drug and alcohol problems and housing, which affect employment prospects but are likely to be considerably harder to address than more specific job-related skills, behaviours and attitudes.

**Internal Consistency** Internal consistency was very good (Cronbach's  $\alpha = 0.85$ ).

***Is each outcome area measuring a unique aspect of the service user's situation?***

**Item redundancy:** No inter-item correlation exceeded the 0.7 threshold, suggesting no redundancy between areas (see Table 1).

***Does the Star detect change occurring within a service?***

**Responsiveness to change:** Wilcoxon Signed Rank Test revealed a statistically significant increase in all outcome areas (see Table 2). A medium effect size was found for Job-specific skills and Social skills for work, and small-medium effect sizes for all other areas.

***Do workers have a consistent understanding of how to apply the scales?***

**Inter-rater reliability:** The average Krippendorff's  $\alpha$  of .77 across the cohort indicates moderate-good inter-rater reliability.

## Conclusion

The results of these initial analyses are encouraging and suggest that the Work Star is a coherent and responsive outcomes measurement tool.

A psychometric factsheet is available for the 3<sup>rd</sup> Edition of the Work Star and further research is in progress to examine the psychometric properties of this Edition, including the relationship between Star readings and other measures (convergent and predictive validity).

## Further research

External research about the Star as an outcomes and keywork measure can be found on our website: <http://www.outcomesstar.org.uk/about-the-star/evidence-and-research/research-library/#all>

**TABLE 1: Correlation matrix for outcome areas (N = 2544)**

	1	2	3	4	5	6	7
1 Job-specific skills							
2 Aspiration and motivation	.59						
3 Job-search skills	.52	.48					
4 Stability	.28	.32	.27				
5 Basic skills	.43	.36	.60	.25			
6 Social skills for work	.53	.52	.47	.32	.41		
7 Challenges	.50	.52	.49	.38	.41	.51	

**TABLE 2: Responsiveness of the Star (N = 2544)**

	First Star median	Final Star median	Z	Effect size $r^2$
Job-specific skills	7.00	8.00	-26.66***	0.37
Aspiration and motivation	7.00	8.00	-17.90***	0.25
Job-search skills	6.00	7.00	-27.88***	0.39
Stability	8.00	8.00	-10.58***	0.15
Basic skills	7.00	7.00	-20.58***	0.29
Social skills for work	7.00	8.00	-22.35***	0.31
Challenges	6.00	7.00	-19.87***	0.28

\*\*\*p <.001

1 Cohen provided rules of thumb for interpreting these effect sizes, suggesting that an r of .1 represents a 'small' effect size, .3 represents a 'medium' effect size and .5 represents a 'large' effect size

## References

Bartlett, M. S. (1954). A note on the multiplying factors for various  $\chi^2$  approximations. *Journal of the Royal Statistical Society. Series B (Methodological)*, 296-298.

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